PVP 14

Code: ME8T2B

IV B.Tech - II Semester – Regular/Supplementary Examinations
March - 2020

AUTOMATION IN MANUFACTURING
(MECHANICAL ENGINEERING)

Duration: 3 hours Max. Marks: 70

PART – A

Answer ***all*** the questions. All questions carry equal marks

11x 2 = 22 M

1.

a) Define Automation.
b) State the USA principle in Automation.
c) What do you mean by Single station manned cell?
d) Define the term blocking in automated production line.
e) How do you measure Line Balance Efficiency?
f) Mention the classification of Automated Guided Vehicles.
g) Define automated storage and retrieval system (AS/RS).
h) Differentiate between ACO and ACC types of adaptive control.
i) What do you understand by Interlock in Computer process control?
j) List out some basic functions of machine vision system.
k) What are the advantages of using CMMs over manual inspection methods?

PART – B

Answer any ***THREE*** questions. All questions carry equal marks. 3 x 16 = 48 M

2. a) List out and explain ten strategies of Automation and production systems. 10 M

   b) Explain the three distinguished control functions of operation in an automatic transfer machine. 6 M

3. a) What is the significance of Kilbridge and Wester's method? What are its advantages over Largest Candidate Rule method? 8 M

   b) Write the procedure to solve the line balancing problem by using: 8 M
   i) Largest Candidate Rule Method and.
   ii) Kilbridge and Westers Method.

4. a) What are the various applications of carousal storage systems? 8 M

   b) Explain the objectives for installing an automated storage system in a factory. 8 M

5. a) Explain with neat block diagram the typical configuration of Adaptive control with Optimization System. 8 M

b) Describe adaptive control with constraint for turning with a neat sketch. 8 M

6. a) Explain the different types of CMM controls. 8 M

b) Name the different types of contact inspection techniques and explain any one. 8 M